Topic/Objectives: 18-2 Alternative Energy Resources; (1) Explain how water, the sun, wind and hydrogen can all be used to generate electricity; (2) Identify the costs and benefits of hydropower, solar power, wind power and hydrogen fuel, (3) Explain the various technologies utilize water, solar, wind and hydrogen power.	**Name:** **Date:** **Period:**

Essential Question: What are the potential uses and limitations of renewable energy sources?

Questions:	**Notes:**
	Hydropower and Ocean Energy ◦ _____ is nonpolluting and relatively inexpensive, but comes at a cost. ◦ Dams and reservoirs interrupt natural water flow changing and _____ _____. ◦ Shifts in the landscape can cause _____ and landslides. ◦ Important _____ and nutrients are prevented from moving down stream. ◦ _____ _____ and _____ _____ _____ conversion can be used to generate electricity.
	Solar Energy ◦ _____ _____ _____ is a natural means of collecting, storing and distributing the sun's energy (ex. Greenhouses). ◦ _____ _____ _____ uses technology to collect, move and store heat from the sun. ◦ _____ -_____ _____ _____ utilize fluids to move and store heat. ◦ _____ (_____) _____ are used to convert solar energy directly into electrical energy. ◦ Weather, cost of production, and production waste currently _____ solar technology.
	Wind Power ◦ Wind power may be utilized by _____ _____ to convert wind's kinetic energy into electrical energy. ◦ Wind turbines may be found solo or built in groups (_____ _____), and may even be found offshore where winds are greater. ◦ While wind turbines have higher _____ _____, they tend to be more profitable in the long run compared to fossil fuel plants. ◦ Wind power is _____ and has been found to cause damage to landscape, harm wildlife, and cause noise pollution.

Hydrogen fuel can be produced from the breakdown of water or other hydrogen-containing compounds.

- _____ may be used to break water down into oxygen and hydrogen gases.
- Hydrogen may also be extracted from methane, but produces _____ _____ as a byproduct.
- Hydrogen's abundance, _____ _____, and ease of transport are major benefits.
- Current expense, _____, and other safety concerns are the biggest hurdles for hydrogen fuel development.
- Current development utilizes _____ _____ that reverse electrolysis to provide a means of producing electricity.

Summary: